

**REMARKS**

Applicant would like to thank the Examiner for the thorough review of the present application. As discussed in detail below, the present claims include recitations that patentably distinguish the claimed invention over the cited references, taken individually or in combination. Based upon the following remarks, Applicant respectfully requests reconsideration and allowance of the pending claims.

**Translation of Applicant Submitted References**

Applicant herein submits English translations for the previously-submitted Korean references:

- Korean Patent Publication No. 1002476860000; inventor Jang and
- Korean Patent Publication No. 1020000037091; inventors Kim et al.

In view of these translations, Applicant respectfully requests consideration of these references in total.

**Amendments to the Claims**

Claims 1 - 6 are pending in the present application. Claims 1 - 6 have been amended to overcome Examiner objections, add clarity, otherwise correct typographical errors and/or more specifically define patentable subject matter.

**Claim Objections and Claim Rejections Under 35. U.S.C. § 112**

Applicant has amended claim 1 to overcome the objection related to proper tense. The term “grinded” has been replaced with the term “ground”.

Claims 1 and 5 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite in that it is not known what is considered to be a “high pressure”. Applicant has amended claims 1 and 5, as well as claims 3 and 4, to more generally claim that the pressure that is applied during post-germination processing is a predetermined pressure.

**Claim Rejections Under 35 U.S.C. § 103(a)**

Claims 1-4 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Application No. 2004/0052924, filed in the name of inventor Kimura (the ‘924 Kimura application) in view of Korean Patent Publication No. 1002476860000, filed in the name of inventor Jang (the Jang publication), Korean Patent Publication No. 10200000037091, filed in the name of inventor Kim et al. and United States Patent Application No. 2002/0182288, file in the name of inventors Kanehiro et al. (the ‘288 Kanehiro application).

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent Application No. 2004/0052924, filed in the name of inventor Kimura (the ‘924 Kimura application) in view of Korean Patent Publication No. 1002476860000, filed in the name of inventor Jang (the ‘000 Jang publication), Korean Patent Publication No. 10200000037091, filed in the name of inventors Kim et al. (the ‘091 Kim publication) and United States Patent Application No. 2002/0182288, file in the name of inventors Kanehiro et al. (the ‘288 Kanehiro application) and in further view of Korean Patent Publication No. 1029910111002, file in the name of inventors Hiromichi et al. (the Hiromichi publication).

Applicants respectfully submits that these rejections have been overcome by the arguments presented below.

**The ‘924 Kimura patent application in view of the ‘000 Jang Publication**

Claim 1 stands rejected on the asserted basis that the ‘924 Kimura application teaches all of the steps except for, among others, grinding the brown rice to a particular weight level. The Examiner relies on ‘000 Jang publication to show that pounding of the brown rice before

germination is known. The Examiner further states that no patentable distinction is seen at this time between the grinding, as claimed in the present application, and the pounding, as described in the '000 Jang publication, absent a showing of unexpected results caused by the rice being grounded to a particular degree.

The '000 Jang publication is limited to a teaching of general pounding for the purpose of polishing the rice grain. Description of the pounding step in the '000 Jang publication is limited to Figure 1, step B and the related detailed discussion at page 7, 3<sup>rd</sup> full paragraph, which reads, in its entirety, "The selected rice grain in full maturity passes through a general pounding step B to become brown rice." This description provides no further details as to how the pounding should be performed or limits prescribed for the pounding operation. Thus, the '000 Jang disclosure does not teach or suggest the precise grinding that is claimed in the present invention, specifically, as claimed in Claim 1, "grinding brown rice to an after-ground weight level ranging from 94.4 % to 98.8 % by weight based on the weight of raw brown rice to partially remove the outermost skin of the brown rice." Thus, Applicant respectfully asserts that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), in that, the '924 Kimura patent application in combination with the '000 Jang reference fails to teach or suggest all of the requirements of the claimed invention, specifically pounding of the brown rice to a specified limit prior to germination.

Applicant further notes that the Examiner believes that no patentable distinction is present between grinding and pounding rice absent a showing of unexpected results. As noted at paragraph [0025] of the present specification grinding to the precise stated level is germane to the present invention. If the brown rice is ground below the lower limit, the texture of the rice becomes rough and hard so that it is difficult to eat, and the brown rice needs a long time for swelling prior to cooking. Thus, grinding below the stated level of 94.4% results in a brown rice that is less desirable to consume and less desirable to cook due to prolonged preparation time. If the brown rice is ground to a level above the upper limit, the embryo of the brown rice is removed. Thus, grinding above the stated level of 98.8 results in a product that is not, by definition, germinated brown rice. "By grinding brown rice to a level of 94.4% to 98.8% by weight based on the weight of raw brown rice, it is possible to protect the embryo that is essential

in germination and to produce brown rice having a soft texture without losing the functions beneficial to the human body imparted by many nutrients.” (paragraph [0025], lines 6 – 10).

Applicant respectfully asserts that unexpected results have been shown and are quantified in the present application. Applicant directs the Examiners attention to paragraphs [0054] and [0055], table 3 and Fig. 2, which compare germinated brown rice prepared in accordance with the present invention to other germinated brown rices. As shown, both Examples 1 and 2, which were prepared in accordance with the present invention were superiorly mitigated in terms of hardness compared to other germinated brown rices; meaning a superior “soft” rice resulted. Specifically, Example 1 experienced a hardness of 817.9 and Example 2 a hardness of 316.1 compared to other brown rices having hardnesses of 974.5 and 1060.5. As noted above, the hardness of the brown rice is directly attributable to precisely controlling the amount of grinding that the rice undergoes prior to germinating the rice. By ensuring that the rice is not ground below 94.4 % of the before-ground weight, the novel process of the present invention results in superior softness compared to other known germinated brown rices. Thus, applicant respectfully asserts that unexpected results have been demonstrated, in that, by precisely controlling the degree by which the rice is ground the resulting germinated brown rice experiences a superior level of softness previously unseen in other known germinated brown rices.

Applicant further asserts that the Examiner has not provided any motivation to combine or modify the references as required per 35 U.S.C. § 103(a). According to the requirements of the statute, the cited references must also suggest the desirability of making the combination or modification. The ‘000 Jang reference is directed to a method for germinating brown rice to, essentially, maximize available nutrients and increase dietary fiber. No teaching or suggestion is presented that the method taught in the ‘000 Jang reference is directed towards or results in a superior germinated brown rice in terms of softness or chewiness. The ‘924 Kimura patent application is directed to a method for germinating cereals to, essentially, increase the amount of melatonin and/or the content of dietary fiber. No teaching or suggestion is presented that the method taught in the ‘000 Jang reference is directed towards or results in a superior germinated brown rice in terms of softness or chewiness.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections of Claim 1. Claims 2-6 are believed allowable for at least the same reasons as presented above with respect to Claim 1 by virtue of their dependence from Claims 1.

**The '924 Kimura patent application in view of the '091 Kim Publication**

Claim 1 stands rejected on the asserted basis that the '924 Kimura application teaches all of the steps except for, among others, changing the germination water at various intervals. The Examiner relies on '091 Kim publication to show that supplying and circulating water in a tank in which rice is germinating is equivalent to changing the water at prescribed intervals, since it is known that bacteria will grow in water.

The '091 Kim patent publication appears to describe a process in which circulating water is applied for 5 to 8 hours permeate moisture into the albumen of the brown rice to concentration of more than 30% to thereby activate the rice, followed by germinating the brown rice in air for 2 to 3 hours and then re-applying the circulating water for 2 to 3 hours to germinate the brown rice. The purpose of the germination process taught in the '091 Kim patent publication is to prevent decay of the brown rice during germination and to accelerate germination growth to thereby germinate a large amount of brown of brown rice in a short time period and eliminate the residual odor generated during the germination process. Applicant notes that the apparatus and method taught in the '091 Kim patent publication require extensive and costly improvements to germination equipment in order to process the rice.

The present invention relies on a more simplified procedure for germination whereby the brown rice is immersed in the acidic germination water for an extended period of time ranging from 10 to 30 hours at lower germination temperatures. As discussed at paragraph [0028] of the present specification, when the germination process is shorter than 10 hours improvement of nutrients and texture is not sufficient because full germination does not occur. In addition, when the germination time is longer than 30 hours, excessive germination results in lower nutrients and lower efficiency. The 10-30 hour germination period is contrary to most conventional

germination processes, which require immersion in water for 1 to 8 hours. The '924 Kimura patent application describes germination within an extended immersion time period of 12 to 24 hours but is silent as to the need to change the water at prescribed intervals.

As discussed at paragraph [0026] of the present specification, since the extended germination process is significantly longer than conventional germination processing undesirable side effects, such as heightened microbial growth, putrefaction and abnormal odor may occur. Therefore, it is necessary to replace the germination water regularly *during the length germination process*, at an interval of 5-10 hours to prevent microbial growth, abnormal taste and abnormal odor. In the conventional germination processes, due to the shorter immersion times, the water may be changed between germination processes as opposed to during the process.

Therefore, circulating water in the manner taught by the '091 Kim patent publication is a far more complex and costly process than the simplified techniques taught and claimed in the present application. Applicant respectfully disagrees with the Examiner's assertion that the circulating water taught in the '091 Kim patent publication is equivalent to the changing of water at prescribed intervals as taught and claimed in the present invention. Thus, Applicant respectfully asserts that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), in that, the '924 Kimura patent application in combination with the '091 Kim reference fails to teach or suggest all of the requirements of the claimed invention, specifically germinating the rice by immersing the water for 10 to 30 hours and changing the immersion bath at 5 to 10 hour intervals.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections of Claim 1. Claims 2-6 are believed allowable for at least the same reasons as presented above with respect to Claim 1 by virtue of their dependence from Claims 1.

#### **The '924 Kimura patent application in view of the '288 Kanehiro et al. patent application**

Claim 1 stands rejected on the asserted basis that the '924 Kimura application describes all of the steps except for, among others, treating the germinated brown rice at the claimed

temperatures and intervals. The Examiner relies on '924 Kimura patent application for a showing of treating the germinated rice with hot air and the '288 Kanehiro patent application for a showing of treating the germinated rice with a steam cooking process.

The '924 Kimura patent application, at paragraph [0030], appears to describe that, among other processes, heat treatment and drying with hot air may be used in order that the germinated rice withstand storage conditions. The '288 Kanehiro patent publication appears to describe steam cooking of germinated rice prior to subjecting the rice to the Japanese process known as "koji" as a means of producing confectionary materials from brown rice. The steam cooking as described in the '288 Kanehiro patent publication is not for the purpose of sterilizing the food, insuring texture quality or maintaining the quality of the germinated brown rice. Rather, the cooking process is used to soften the rice prior to employing the "koji" process". In neither the '924 Kimura patent application or the '288 Kanehiro patent application is a teaching or suggested provided for treating the germinated rice at a temperature of 100 degrees Celsius to 140 degrees Celsius, at a prescribed pressure, for a time period ranging from 5 to 40 minutes.

According to the presently claimed invention, as discussed at paragraph [0030] of the present application, the specified temperature range and time interval results in an  $F_0$  value of 5 to 30, representing the degree of thermal sterilization of food. As discussed at paragraph [0031], if the treating temperature or time is lower than 100°C and/or shorter than 5 minutes, the starch in the germinated brown rice does not gelatinize sufficiently, and thus the texture quality is lessened and the effect on destroying microbes is lowered. If the treating occurs at temperatures above 140°C and/or times longer than 40 minutes excessive gelatinization occurs, thereby lowering the quality of the germinated brown rice.

Thus, Applicant respectfully asserts that the Examiner has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), in that, the '924 Kimura patent application in combination with the '288 Kanehiro patent application reference fails to teach or suggest all of the requirements of the claimed invention, specifically treating the germinated rice at 100°C - 140°C for 5 to 40 minutes at a prescribed pressure.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections of Claim 1. Claims 2-6 are believed allowable for at least the same reasons as presented above with respect to Claim 1 by virtue of their dependence from Claims 1.

**Conclusion**

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and a Notice to that effect is earnestly solicited.

Should any questions remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

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